Mr. Michael T. Davis Pre-Calculus	2.1, 2.2, 2.3 Units Quiz Practice December7, 2015

Name: Solutions

Directions: Be careful to **give factors** when the question says "Factor" and **give zeros or solutions** when the question says "Solve".

1. Factor $5x^2+29x-6$

$(5x-1)(x+6)$

2. Solve $4x^2-25=0$

$(2x-5)(2x+5)=0$ $\quad \left\{\frac{5}{2}, \frac{-5}{2}\right\}$

$2x-5=0 \quad 2x+5=0$

$2x=5 \quad 2x=-5$

$x=\frac{5}{2} \quad x=\frac{-5}{2}$

3. Factor $n^2+10n+25$

$(n+5)(n+5)=(n+5)^2$

4. Solve $x^2-6x-16=0$

$(x-8)(x+2)=0$ $\quad \{8,-2\}$

$x-8=0 \quad x+2=0$

$x=8 \quad x=-2$

5. Factor y^3-27

$(y-3)(y^2+3y+9)$

6. Solve $7m^2-21m=0$

$7m(m-3)=0$ $\quad \{0,3\}$

$7m=0 \quad m-3=0$

$m=0 \quad m=3$

7. Factor $2y^3+6y^2-36y$

$2y(y^2+3y-18)=2y(y+6)(y-3)$

8. Solve $x^4 - 5x^2 - 36 = 0$

$(x^2-9)(x^2+4)=0$

$(x-3)(x+3)(x^2+4)=0$

$\{3, -3\}$

9. Factor $x^3 + 3x^2 - 4x - 12$

$x^2(x+3) - 4(x+3)$

$(x+3)(x^2-4)$

$(x+3)(x-2)(x+2)$

10. Solve $x^3 - 3x^2 - 13x + 15 = 0$

$(x-1)$ is a factor

1	1	-3	-13	15
		1	-2	-15
	1	-2	-15	0 = R

$x^2 - 2x - 15 = 0$

$(x-5)(x+3)=0$

$(x-1)(x-5)(x+3)=0$

$\{1, 5, -3\}$

11. A polynomial function of degree 3 has the solution set $\{-1, 3, -5\}$. Determine the equation of the function in standard form.

$(x+1)(x-3)(x+5)=0$

$(x+1)(x^2+2x-15)=0$

$x^3+3x^2-13x-15=0$

12. A polynomial function of degree 3 has the solution set $\left\{0, \frac{-1}{2}, 4\right\}$. Determine the equation of the function in standard form.

$x = -\frac{1}{2}$

$2x = -1$

$2x + 1 = 0$

$x(2x+1)(x-4)=0$

$x(2x^2-7x-4)=0$

$2x^3-7x^2-4x=0$

13. A polynomial function of degree 3 has the solution set $\{-3, 2\}$ where 2 is a double root. Determine the equation of the function in standard form.

$(x+3)(x-2)(x-2)=0$

$(x+3)(x^2-4)=0$

$x^3+3x^2-4x-12=0$